



# SEQUENCE LISTING

<110> Steward, Lance E.  
Fernandez-Salas, Ester  
Herrington, Todd M.  
Aoki, Kei R.

<120> Leucine-Based Motif and Clostridial Neurotoxins

<130> ALLE0014-101 (17355 CIP1-(BOT))

<140> US 09/910,346

<141> 2001-07-20

<150> US 09/620,840

<151> 2000-07-21

<160> 23

<170> PatentIn version 3.2

<210> 1

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> fragment having properties substantially similar to that of  
leucine based sequence

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa is any amino acid.

<220>

<221> MISC\_FEATURE

<222> (3)..(5)

<223> Xaa is any amino acid.

<400> 1

Xaa Asp Xaa Xaa Xaa Leu Leu  
1 5

<210> 2

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> fragment having properties substantially similar to that of  
leucine based sequence

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa is any amino acid.

<220>

<221> MISC\_FEATURE

<222> (3)..(5)

<223> Xaa is any amino acid.

<400> 2

Xaa Glu Xaa Xaa Xaa Leu Leu  
1 5

<210> 3

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> fragment having properties substantially similar to that of  
leucine based sequence

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa is any amino acid.

<220>

<221> MISC\_FEATURE

<222> (3)..(5)

<223> Xaa is any amino acid.

<400> 3

Xaa Asp Xaa Xaa Xaa Leu Ile  
1 5

<210> 4

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> fragment having properties substantially similar to that of  
leucine based sequence

<220>

<221> MISC\_FEATURE

<222> (1)..(1)

<223> Xaa is any amino acid.

<220>

<221> MISC\_FEATURE

<222> (3)..(5)

<223> Xaa is any amino acid.

<400> 4

Xaa Asp Xaa Xaa Xaa Leu Met  
1 5

<210> 5

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> fragment having properties substantially similar to that of

leucine based sequence

<220>  
<221> MISC\_FEATURE  
<222> (1)..(1)  
<223> Xaa is any amino acid.

<220>  
<221> MISC\_FEATURE  
<222> (3)..(5)  
<223> Xaa is any amino acid.

<400> 5

Xaa Glu Xaa Xaa Xaa Leu Ile  
1 5

<210> 6  
<211> 7  
<212> PRT  
<213> Rat

<220>  
<223> presumably rat origin

<220>  
<221> MISC\_FEATURE  
<222> (1)..(1)  
<223> Xaa is any amino acid.

<220>  
<221> MISC\_FEATURE  
<222> (3)..(5)  
<223> Xaa is any amino acid.

<400> 6

Xaa Glu Xaa Xaa Xaa Leu Met  
1 5

<210> 7  
<211> 7  
<212> PRT  
<213> Rat

<220>  
<223> presumably rat origin

<400> 7

Phe Glu Phe Tyr Lys Leu Leu  
1 5

<210> 8  
<211> 7  
<212> PRT  
<213> Rat

<400> 8

Glu Glu Lys Arg Ala Ile Leu

1 5

<210> 9  
 <211> 7  
 <212> PRT  
 <213> Rat

<400> 9

Glu Glu Lys Met Ala Ile Leu  
 1 5

<210> 10  
 <211> 7  
 <212> PRT  
 <213> Rat

<400> 10

Ser Glu Arg Asp Val Leu Leu  
 1 5

<210> 11  
 <211> 7  
 <212> PRT  
 <213> Rat

<400> 11

Val Asp Thr Gln Val Leu Leu  
 1 5

<210> 12  
 <211> 8  
 <212> PRT  
 <213> Mouse

<400> 12

Ala Glu Val Gln Gln Asn Leu Leu  
 1 5

<210> 13  
 <211> 7  
 <212> PRT  
 <213> Frog

<400> 13

Ser Asp Lys Gln Asn Leu Leu  
 1 5

<210> 14  
 <211> 7  
 <212> PRT  
 <213> Chicken

<400> 14

Ser Asp Arg Gln Asn Leu Ile  
1 5

<210> 15  
<211> 7  
<212> PRT  
<213> Sheep

<400> 15

Ala Asp Thr Gln Val Leu Met  
1 5

<210> 16  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 16

Ser Asp Lys Gln Thr Leu Leu  
1 5

<210> 17  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 17

Ser Gln Ile Lys Arg Leu Leu  
1 5

<210> 18  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 18

Ala Asp Thr Gln Ala Leu Leu  
1 5

<210> 19  
<211> 437  
<212> PRT  
<213> Clostridium botulinum

<400> 19

Pro Phe Val Asn Lys Gln Phe Asn Tyr Lys Asp Pro Val Asn Gly Val  
1 5 10 15

Asp Ile Ala Tyr Ile Lys Ile Pro Asn Ala Gly Gln Met Gln Pro Val  
20 25 30

Lys Ala Phe Lys Ile His Asn Lys Ile Trp Val Ile Pro Glu Arg Asp  
 35 40 45  
 Thr Phe Thr Asn Pro Glu Glu Gly Asp Leu Asn Pro Pro Pro Glu Ala  
 50 55 60  
 Lys Gln Val Pro Val Ser Tyr Tyr Asp Ser Thr Tyr Leu Ser Thr Asp  
 65 70 75 80  
 Asn Glu Lys Asp Asn Tyr Leu Lys Gly Val Thr Lys Leu Phe Glu Arg  
 85 90 95  
 Ile Tyr Ser Thr Asp Leu Gly Arg Met Leu Leu Thr Ser Ile Val Arg  
 100 105 110  
 Gly Ile Pro Phe Trp Gly Gly Ser Thr Ile Asp Thr Glu Leu Lys Val  
 115 120 125  
 Ile Asp Thr Asn Cys Ile Asn Val Ile Gln Pro Asp Gly Ser Tyr Arg  
 130 135 140  
 Ser Glu Glu Leu Asn Leu Val Ile Ile Gly Pro Ser Ala Asp Ile Ile  
 145 150 155 160  
 Gln Phe Glu Cys Lys Ser Phe Gly His Glu Val Leu Asn Leu Thr Arg  
 165 170 175  
 Asn Gly Tyr Gly Ser Thr Gln Tyr Ile Arg Phe Ser Pro Asp Phe Thr  
 180 185 190  
 Phe Gly Phe Glu Glu Ser Leu Glu Val Asp Thr Asn Pro Leu Leu Gly  
 195 200 205  
 Ala Gly Lys Phe Ala Thr Asp Pro Ala Val Thr Leu Ala His Glu Leu  
 210 215 220  
 Ile His Ala Gly His Arg Leu Tyr Gly Ile Ala Ile Asn Pro Asn Arg  
 225 230 235 240  
 Val Phe Lys Val Asn Thr Asn Ala Tyr Tyr Glu Met Ser Gly Leu Glu  
 245 250 255  
 Val Ser Phe Glu Glu Leu Arg Thr Phe Gly Gly His Asp Ala Lys Phe  
 260 265 270  
 Ile Asp Ser Leu Gln Glu Asn Glu Phe Arg Leu Tyr Tyr Tyr Asn Lys  
 275 280 285

Phe Lys Asp Ile Ala Ser Thr Leu Asn Lys Ala Lys Ser Ile Val Gly  
290 295 300

Thr Thr Ala Ser Leu Gln Tyr Met Lys Asn Val Phe Lys Glu Lys Tyr  
305 310 315 320

Leu Leu Ser Glu Asp Thr Ser Gly Lys Phe Ser Val Asp Lys Leu Lys  
325 330 335

Phe Asp Lys Leu Tyr Lys Met Leu Thr Glu Ile Tyr Thr Glu Asp Asn  
340 345 350

Phe Val Lys Phe Phe Lys Val Leu Asn Arg Lys Thr Tyr Leu Asn Phe  
355 360 365

Asp Lys Ala Val Phe Lys Ile Asn Ile Val Pro Lys Val Asn Tyr Thr  
370 375 380

Ile Tyr Asp Gly Phe Asn Leu Arg Asn Thr Asn Leu Ala Ala Asn Phe  
385 390 395 400

Asn Gly Gln Asn Thr Glu Ile Asn Asn Met Asn Phe Thr Lys Leu Lys  
405 410 415

Asn Phe Thr Gly Leu Phe Glu Phe Tyr Lys Leu Leu Cys Val Arg Gly  
420 425 430

Ile Ile Thr Cys Lys  
435

<210> 20  
<211> 441  
<212> PRT  
<213> Clostridium botulinum

<400> 20

Met Pro Val Thr Ile Asn Asn Phe Asn Tyr Asn Asp Pro Ile Asp Asn  
1 5 10 15

Asn Asn Ile Ile Met Met Glu Pro Pro Phe Ala Arg Gly Thr Gly Arg  
20 25 30

Tyr Tyr Lys Ala Phe Lys Ile Thr Asp Arg Ile Trp Ile Ile Pro Glu  
35 40 45

Arg Tyr Thr Phe Gly Tyr Lys Pro Glu Asp Phe Asn Lys Ser Ser Gly  
50 55 60

Ile Phe Asn Arg Asp Val Cys Glu Tyr Tyr Asp Pro Asp Tyr Leu Asn  
Page 7

65		70		75		80									
Thr	Asn	Asp	Lys	Lys 85	Asn	Ile	Phe	Phe	Gln 90	Thr	Leu	Ile	Lys	Leu 95	Phe
Asn	Arg	Ile	Lys 100	Ser	Lys	Pro	Leu	Gly 105	Glu	Lys	Leu	Leu	Glu 110	Met	Ile
Ile	Asn	Gly 115	Ile	Pro	Tyr	Leu	Gly 120	Asp	Arg	Arg	Val	Pro 125	Leu	Glu	Glu
Phe	Asn 130	Thr	Asn	Ile	Ala	Ser 135	Val	Thr	Val	Asn	Lys 140	Leu	Ile	Ser	Asn
Pro 145	Gly	Glu	Val	Glu	Arg 150	Lys	Lys	Gly	Ile	Phe 155	Ala	Asn	Leu	Ile	Ile 160
Phe	Gly	Pro	Gly	Pro 165	Val	Leu	Asn	Glu	Asn 170	Glu	Thr	Ile	Asp	Ile 175	Gly
Ile	Gln	Asn	His 180	Phe	Ala	Ser	Arg	Glu 185	Gly	Phe	Gly	Gly	Ile 190	Met	Gln
Met	Lys	Phe 195	Cys	Pro	Glu	Tyr	Val 200	Ser	Val	Phe	Asn	Asn 205	Val	Gln	Glu
Asn	Lys 210	Gly	Ala	Ser	Ile	Phe	Asn 215	Arg	Arg	Gly	Tyr 220	Phe	Ser	Asp	Pro
Ala 225	Leu	Ile	Leu	Met	His 230	Glu	Leu	Ile	His	Val 235	Leu	His	Gly	Leu	Tyr 240
Gly	Ile	Lys	Val	Asp 245	Asp	Leu	Pro	Ile	Val 250	Pro	Asn	Glu	Lys	Lys 255	Phe
Phe	Met	Gln	Ser 260	Thr	Asp	Thr	Ile	Gln 265	Ala	Glu	Glu	Leu	Tyr 270	Thr	Phe
Gly	Gly	Gln 275	Asp	Pro	Ser	Ile	Ile 280	Ser	Pro	Ser	Thr	Asp 285	Lys	Ser	Ile
Tyr 290	Asp	Lys	Val	Leu	Gln	Asn 295	Phe	Arg	Gly	Ile	Val 300	Asp	Arg	Leu	Asn
Lys 305	Val	Leu	Val	Cys	Ile 310	Ser	Asp	Pro	Asn	Ile 315	Asn	Ile	Asn	Ile	Tyr 320
Lys	Asn	Lys	Phe	Lys	Asp	Lys	Tyr	Lys	Phe	Val	Glu	Asp	Ser	Glu	Gly



325

330

335

Lys Tyr Ser Ile Asp Val Glu Ser Phe Asn Lys Leu Tyr Lys Ser Leu  
 340 345 350

Met Leu Gly Phe Thr Glu Ile Asn Ile Ala Glu Asn Tyr Lys Ile Lys  
 355 360 365

Thr Arg Ala Ser Tyr Phe Ser Asp Ser Leu Pro Pro Val Lys Ile Lys  
 370 375 380

Asn Leu Leu Asp Asn Glu Ile Tyr Thr Ile Glu Glu Gly Phe Asn Ile  
 385 390 395 400

Ser Asp Lys Asn Met Gly Lys Glu Tyr Arg Gly Gln Asn Lys Ala Ile  
 405 410 415

Asn Lys Gln Ala Tyr Glu Glu Ile Ser Lys Glu His Leu Ala Val Tyr  
 420 425 430

Lys Ile Gln Met Cys Lys Ser Val Lys  
 435 440

&lt;210&gt; 21

&lt;211&gt; 4

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Chemically synthesized peptide fragment

&lt;400&gt; 21

Lys Ala Phe Lys

1

&lt;210&gt; 22

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Chemically synthesized peptide fragment

&lt;400&gt; 22

Phe Asp Lys Leu Tyr Lys

1

5

&lt;210&gt; 23

&lt;211&gt; 4

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

<220>  
<223> Chemically synthesized peptide fragment

<220>  
<221> MISC\_FEATURE  
<222> (2)..(3)  
<223> Xaa is any amino acid.

<220>  
<221> MISC\_FEATURE  
<222> (4)..(4)  
<223> Xaa is any hydrophobic amino acid.

<400> 23

Tyr Xaa Xaa Xaa  
1